ABSTRACT OF THE DISCLOSURE

A shape measuring apparatus for measuring an outer surface of a measurement object, includes: a photo-sensor unit including two photo-sensors each provided with a number of pixels, first and second signal processing sections which executes combination processing to light reception signals outputted from the photo-sensors. The first signal processing section includes a corrector for correcting errors of light reception signals from one photo-sensor with respect to light reception signals from another photo-sensor in the incident direction or the direction perpendicular to the incident direction based on the relative displacement stored in the displacement memory. The second signal processing section includes a corrector for correcting the relative displacement by delaying the sending of the reception signals from one photo-sensor with respect to the sending of the reception signals from another photo-sensor. The first and second signal processing sections are selectively changed over.

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